


101884 TEST JIG

APPENDIX III TO ES-1884

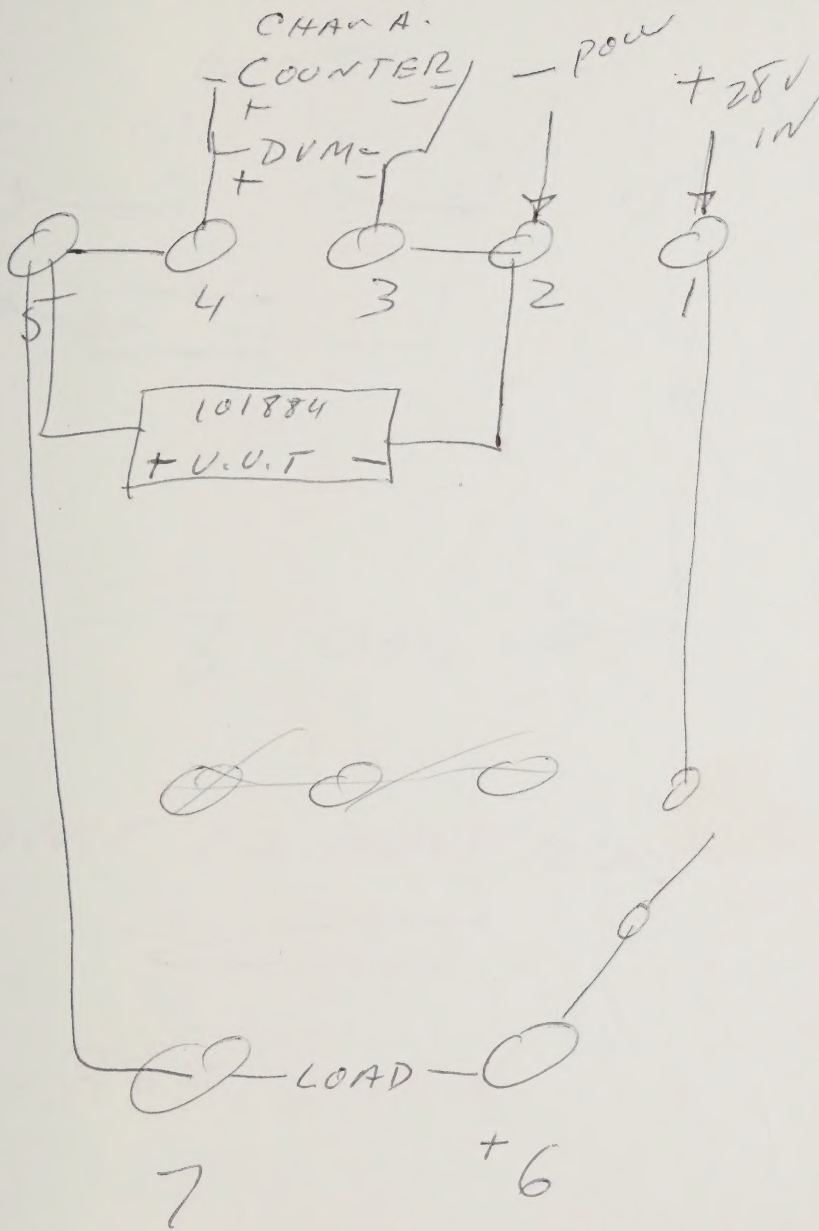
APPENDIX II TO ES-1885

APPENDIX I TO ES-1886



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<https://archive.org/details/101878101884gene00unse>

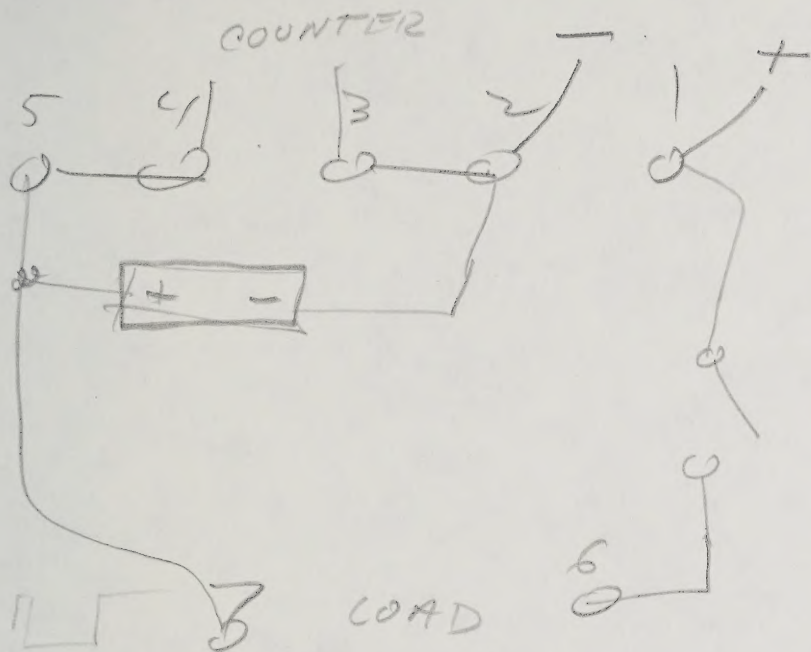


101884

TEST JIG.







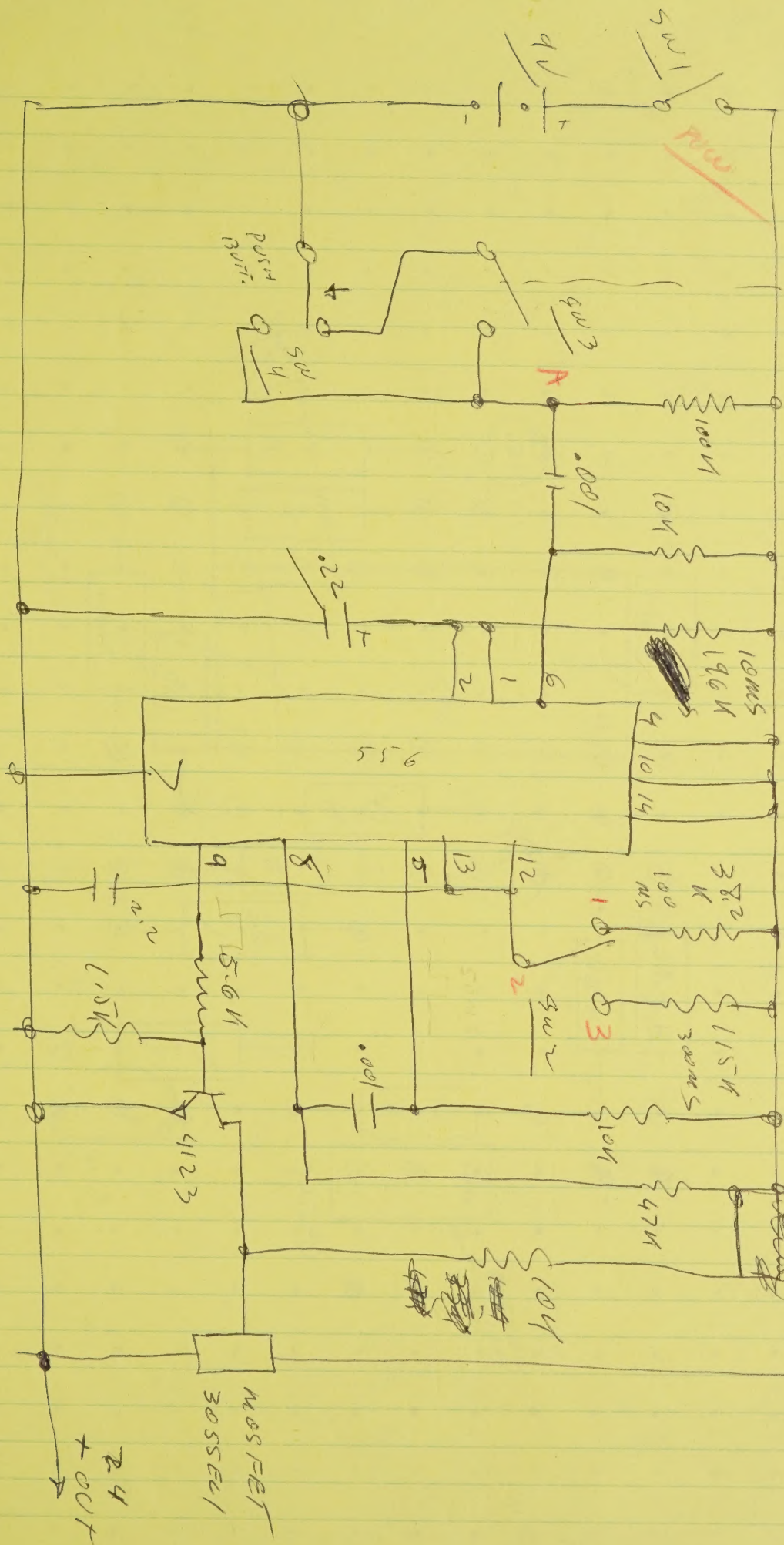
ADJUST TO ABOUT 101MS

$$R2 = \approx 4224$$



1-32

1563



SW- BATT. POWELL

SW2 - 180ms / 300ms SEVER

SW3 - REACTIVE WITH RIMING

SW4 - RECYCLE AFTER TREAT

TE-1189

RECORDER

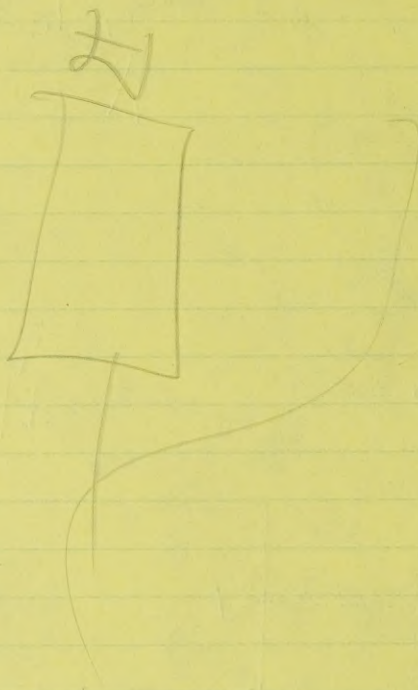
10184

12-6-21

MOSFET  
3055EC1

24 OCT









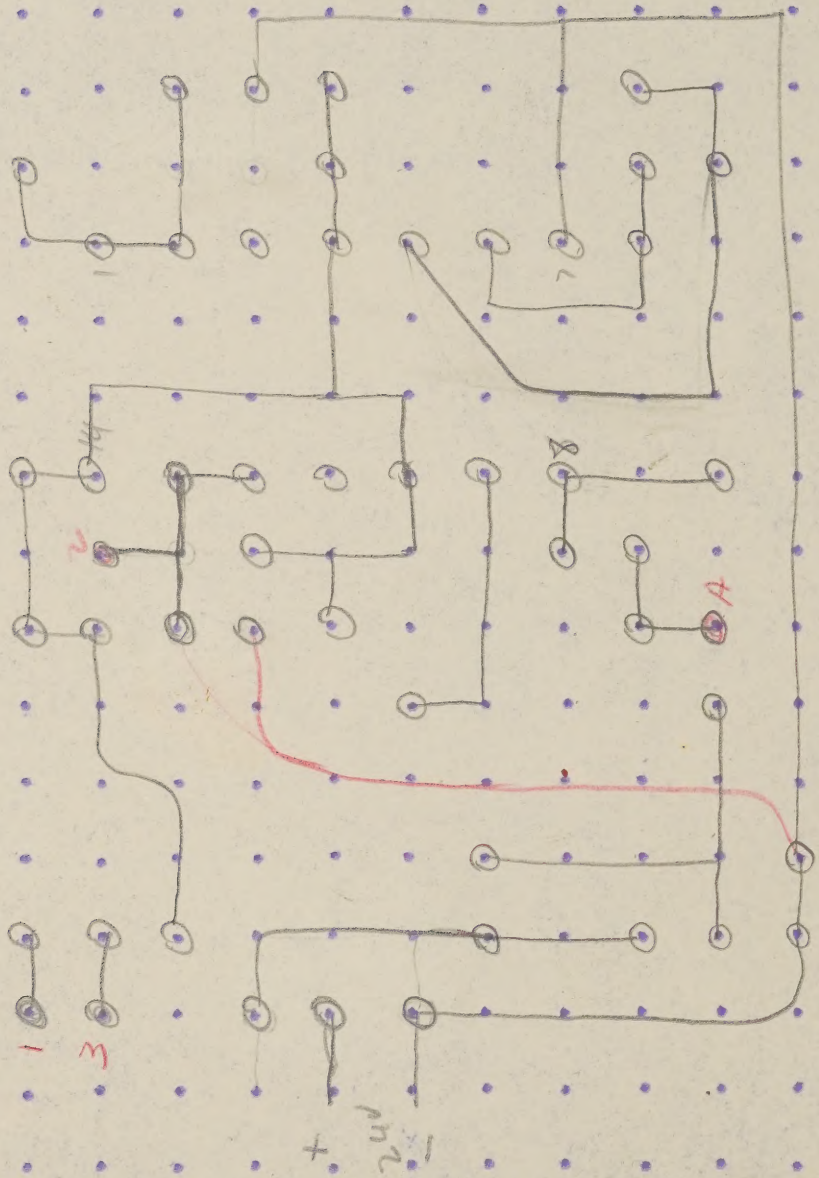
Reverent Time

F-02 10/884

12-6-90

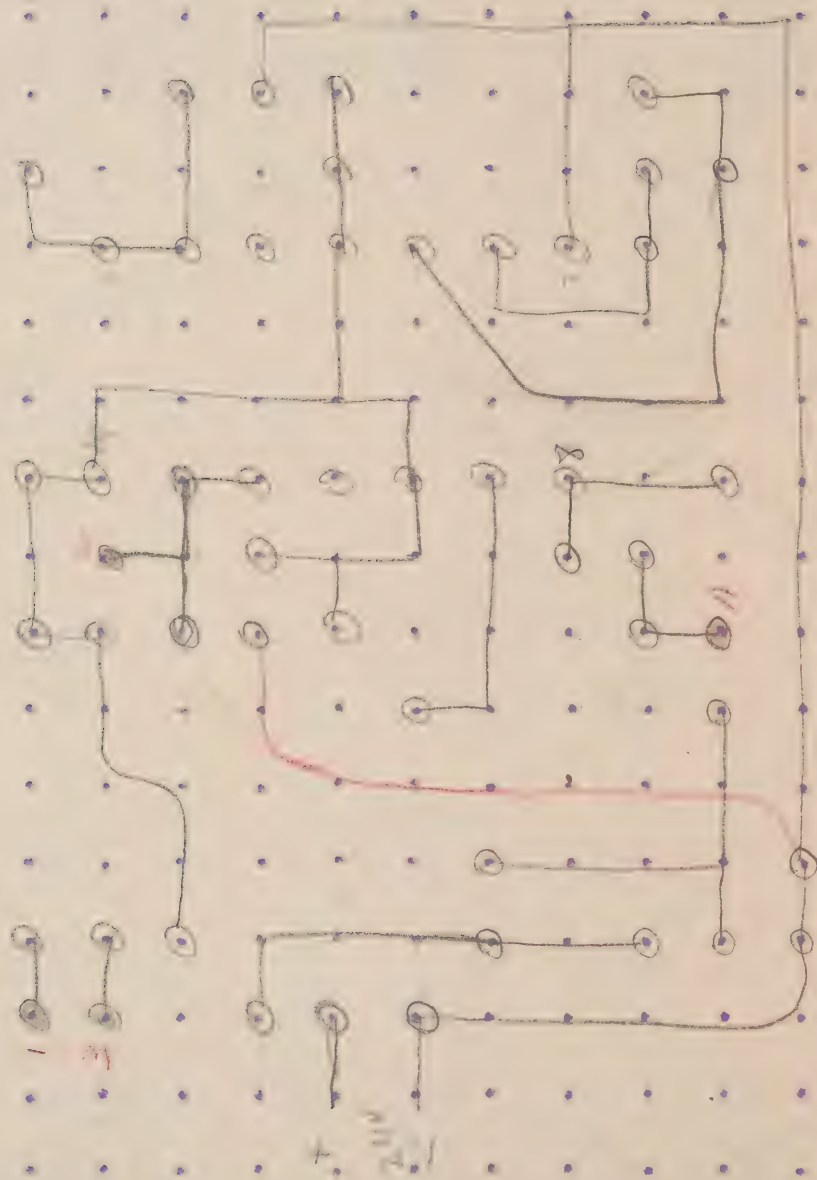


1.6  
1.7

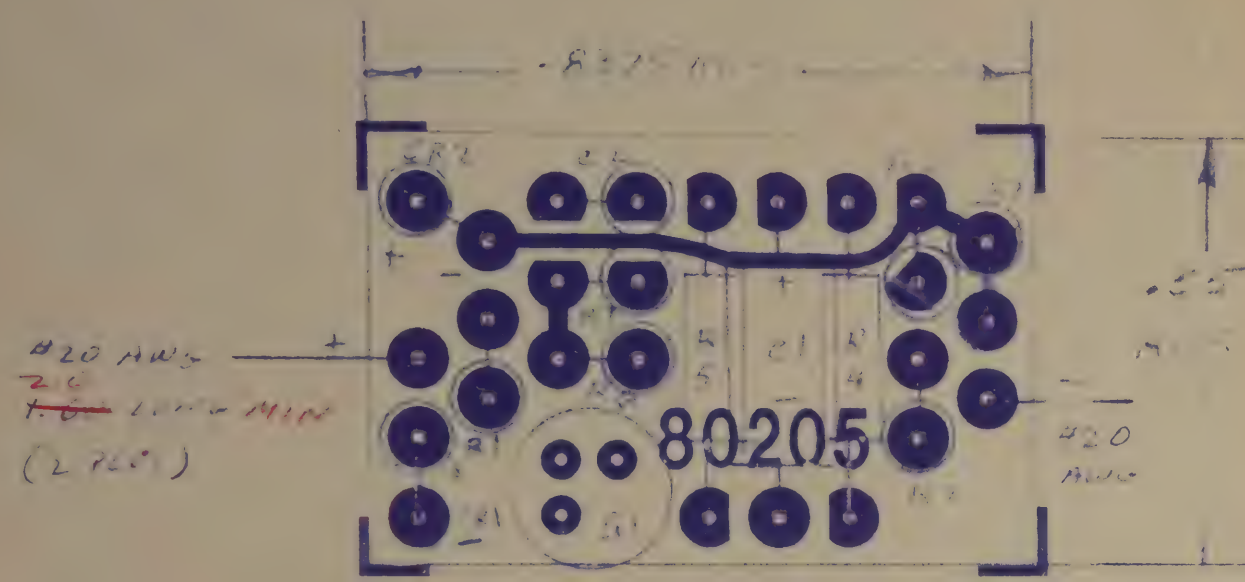




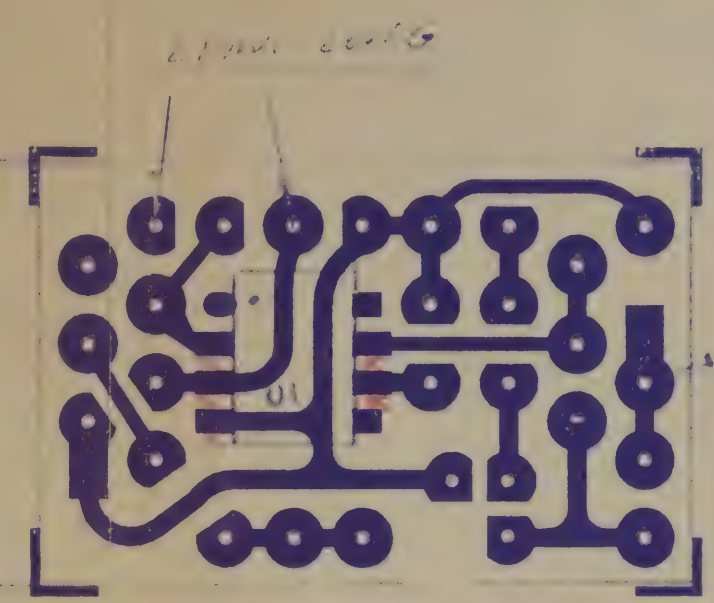




101886  
SHEET 1 OF 1  
H. S. PARKO - (714) 211-1111



SIDE A



SIDE B

3. PARTS LIST: PL101575 (RM) 884  
2. SCHEMATIC: 101879 (RM) 885  
1. TOP DRAWING: 101878 (RM)  
NOTES: 884

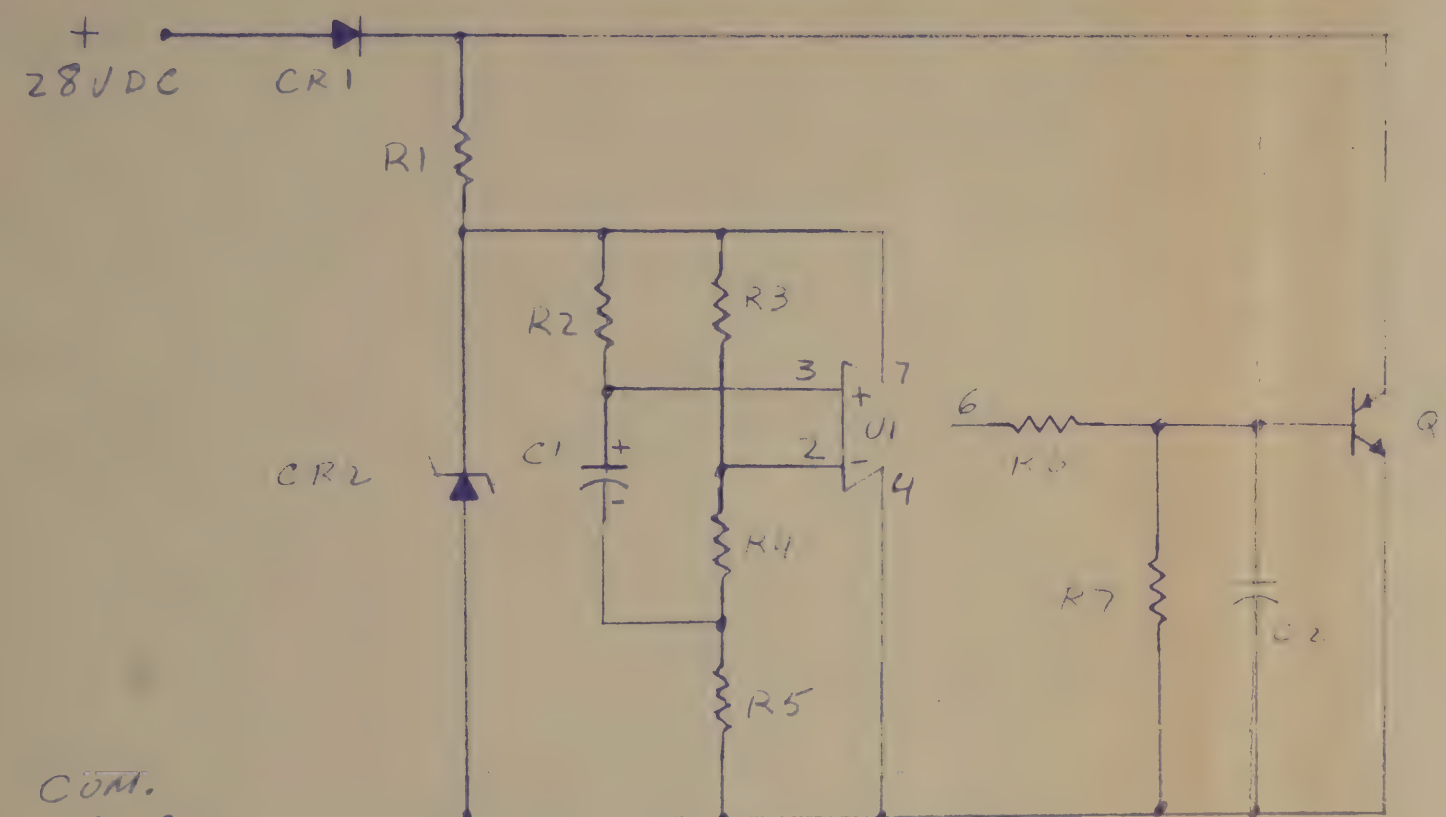
DIMENSIONS ARE IN INCHES AND AFTER PLATING	DR	<i>P. H. H.</i>	5/2/72
	CHK		
	DSGN		
	PROJ		
TOLERANCES (unless otherwise specified)	REL	<i>C. H. H.</i>	5/4/72
.X ±.1	APPROVED		
.XX +.03	APPROVED		
.XXX .010	DO NOT SCALE DRAWING		
ANGLES +.05	SCALE 4:1		
MACH	CODE IDENT NO.		
SURF	13979		
	SIZE B		
	ASSEMBLY TIME DELAY UNIT 886		
	SHEET OF 1		











**884**

3. PARTS LIST: PL 101878 (REF.)  
 2. ASSEMBLY: 101840 (REF.) **886**  
 1. TOP DRAWING: 101878 (REF.)  
 NOTES: **884**

DIMENSIONS ARE IN INCHES AND AFTER PLATING  TOLERANCES (unless otherwise specified) .X ±.1 .XX ±.03 .XXX ±.010 ANGLES ± 0.5° MACH SURF <input checked="" type="checkbox"/>	DR <i>Hand</i>	4-26-90	 <b>Parko</b> ELECTRONICS COMPANY INC., SANTA ANA, CALIF.	<b>SCHEMATIC</b> <b>TIME DELAY UNIT</b> <span style="color: red; font-weight: bold;">885</span>		
	CHK					
	DSGN					
	PROJ					
	REL <i>Cecede</i>	4-30-90		CODE IDENT NO.	SIZE	REV
	APPROVED			<b>13979</b>	<b>B</b>	<del>101879</del>
	APPROVED					
	DO NOT SCALE DRAWING			SCALE		SHEET 1 OF 1

101888  
 SHEET 1 OF 1  
 TIME DELAY UNIT (101888)





# Parko

**ELECTRONICS COMPANY, INC. IRVINE CALIFORNIA**

## GROUP B INSPECTION RECORD

Appendix II to ES 1884

DATE MAR 4-1-71 SHOP ORDER 5033 ENG. SPEC. ES 1884

PARKO P/N 101884 CUSTOMER P/N 5493935

CUSTOMER AND P.O. NO. General Dynamics/P.O. VP138

[illegible]

1

1777



B  
5

22

27

32

34

42

44

54

63

68

70

74

84

C  
15

24

31

33

41

43

50

57

67

69

72

83

89



C - SALT SPRAY

✓ 3

✓ 10

✓ 13

✓ 16

✓ 25

✓ 36

✓ 46

✓ 49

✓ 52

✓ 60

✓ 73

✓ 80

✓ 82





~~5~~ <sup>108.83</sup> ~~104.11~~ 62 - 107.27

15 - 106.26 ~~63 - 106.05~~

~~22 - 107.82~~ 67 - 104.37

~~24 - 107.12~~ 68 - 106.78

~~27 - 105.58~~ 69 - 103.43

~~31 - 108.46~~

~~32 - 107.11~~ 70 - 103.64

~~33 - 104.74~~ 72 - 103.65

~~34 - 104.40~~

37 - 107.14 75 - 107.86

~~41 - 104.46~~ 78 - 107.79

~~42 - 106.60~~ 79 - 103.73

~~43 - 105.24~~

44 107.31 ~~83 - 106.90~~

~~45 - 106.46~~ 84 106.97

~~50 - 103.96~~ 89 - 107.36

~~54 - 107.29~~

~~57 - 106.47~~





B & C

TEMP. SCOPE

5 54

15 57

22

24 63

27 67

31 68

32 69

33 70

34 72

41 79

42 83

43 84

44 89

50



~~TEMP~~

TEMP

51	63
15	67
22	68
24	69
27	70
31	72
32	79
33	83
34	84
41	84
42	
43	
44	
50	
54	
57	

TEMP











2-28-91 -35°C

FINAL IN PAW

21 - 97.60 - 97.64  
~~23~~ - 96.85 - 96.86  
24 96.47 - 96.18  
25 - 96.33 - 96.32  
26 - 95.48 - 95.50  
27 - 96.50 - 96.51  
28 - 97.48 - 97.50  
29 - 97.04 - 97.05  
30 - 96.70 - 96.71  
35 - 96.72 - 96.74  
36 - 96.65 - 96.65  
37 - 95.87 - 95.88  
38 - 96.60 - 96.61  
39 - 96.55 - 96.56  
40 - 97.49 - 97.50  
61 - 98.22 - 98.23  
62 - 96.74 - 96.75  
64 - 97.20 - 97.21  
65 - 97.44 - 97.45  
66 - 97.99 - 98.01  
68 - 96.17 - 96.18  
71 - 97.08 - 97.09  
73 - 97.26 - 97.28  
74 - 96.36 - 96.37  
75 - 96.68 - 96.70  
76 - 97.21 - 97.23

77 - 97.18 - 97.19  
78 - 96.46 - 96.47  
80 - 97.13 - 97.15  
81 - 97.21 - 97.22  
82 - 96.92 - 96.94  
83 - 96.11 - 96.11  
84 - 97.32 - 97.33  
85 - 97.12 - 97.14  
86 - 97.08 - 97.10  
87 - 96.84 - 96.85  
88 - 97.45 - 97.46  
89 - 96.98 - 96.99  
90 - 96.44 - 96.47  
5 - 99.49 - 99.49  
15 - 98.68 - 98.69



2-25-91

+75°C.

101889 in can

FINA

1st 2nd 3rd

1st 2nd 3rd

22-103.82-103.70-103.68

31-103.90-103.62-103.54

32-103.45-103.28-103.23

33-104.74-104.18-103.98

34-104.48-103.93-103.75

41-104.16-103.78-103.81

50-103.96-103.76-103.70

63-104.05-103.69-103.65

67-104.31-104.23-104.15

69-103.43-103.34-103.33

70-103.69-103.34-103.16

72-103.65-103.48-103.43

79-103.73-103.61-103.55

✓42-106.60-106.32-106.06

✓43-105.29-105.13-104.77

✓44-107.31-106.82-106.67

✓45-106.46-106.02-106.51

46-111.58-108.56-107.15

47-110.87-107.54-106.33

48-110.90-108.55-108.56

49-112.14-108.44-107.00

51-111.06-108.21-107.08

52-111.82-108.59-107.55

53-110.97-108.27-107.49

✓54-107.29-106.81-106.80

55-111.23-108.10-107.03

56-108.60-107.11-106.57

57-106.97-106.46-106.40

58-108.90-107.59-107.32

59-108.78-107.81-107.63

60-111.87-108.67-107.37





FEB-6-91

WPAW

-35°C

+85°C

195

2nd

1	-	98.35 MS	107.83	-	107.55
2	-	99.80 "	111.98	-	107.75
3	-	99.32 "	114.84	-	111.78
4	-	99.10 "	113.62	-	109.99
5	-	99.30 "	107.81	-	104.98
6	-	98.75 "	111.13	-	107.57
7	-	99.12 "	112.77	-	107.25
8	-	99.13 "	110.91	-	107.70
9	-	99.56	112.06	-	108.33
10	-	99.24	113.59	-	109.08
11	-	101.08	114.38	-	110.46
12	-	99.33	110.57	-	107.70
13	-	100.33	113.18	-	110.49
14	-	100.82	110.44	-	107.00
15	-	98.60	108.26	-	106.62
16	-	100.40	113.75	-	110.21
17	-	100.15	111.70	-	108.56
18	-	98.55	109.29	-	107.40
19	-	99.03	110.33	-	108.01
20	-	99.12	111.62	-	108.86

RUN UNITS UNDER POWER  
BEFORE TIMING

111 - 115.10

113. 49 - 111

118 - 113.28

108 74 104. 27

2-25-91

-35°C

101884  
EINAC

1st 2nd

1st 2nd

22 - 98.32 - 98.32

57 - 97.17 - 97.18

31 - 98.25 - 98.24

59 - 96.04 - 96.06

32 - 98.51 - 98.51

60 - 97.28 - 97.29

33 - 98.02 - 98.02

34 - 98.13 - 98.13

41 - 98.38 - 98.38

50 - 98.54 - 98.54

63 - 98.14 - 98.19

67 - 97.73 - 97.74

69 - 98.41 - 98.41

70 - 98.17 - 98.18

72 - 98.32 - 98.33

79 - 98.31 - 98.31

42 - 95.45 - 95.46

43 - 98.01 - 98.03

44 - 97.36 - 97.39

45 - 96.18 - 96.16

46 - 96.95 - 96.97

47 - 97.81 - 97.82

48 - 96.95 - 96.96

49 - 97.64 - 97.65

51 - 96.68 - 96.69

52 - 96.93 - 96.94

53 - 97.10 - 97.12

54 - 96.70 - 96.71

55 - 97.27 - 97.28

56 - 96.50 - 96.50

57 - 95.63 - 95.63





ROOM AFTER +85°C RUN

RUNOT

OUT OF

61 100.22 - 100.22 - 100.22  
62 100.09 - 100.09 - 100.10  
63 100.13 - 100.12 - 100.12  
64 100.05 - 100.06 - 100.09  
65 100.19 - 100.18 - 100.18  
66 100.21 - 100.18 - 100.20  
67 100.08 - 100.05 - 100.06  
68 99.99 - 99.99 - 100.01  
69 100.13 - 100.12 - 100.12  
70 98.99 - 98.99 - 98.99 CHANGE CAP  
71 100.28 - 100.27 - 100.28  
72 99.94 - 99.94 - 99.94  
73 100.06 - 100.05 - 100.05  
74 100.00 - 100.01 - 100.04  
75 100.07 - 100.07 - 100.07  
76 99.94 - 99.94 - 99.95  
77 100.05 - 100.06 - 100.07  
78 100.00 - 100.00 - 100.01  
79 100.06 - 100.06 - 100.07  
80 100.01 - 100.01 - 100.01  
81 99.94 - 99.93 - 99.94  
82 100.03 - 100.02 - 100.03  
83 100.08 - 100.08 - 100.09  
84 100.11 - 100.11 - 100.11  
85 100.08 - 99.95 - 99.98  
86 99.92 - 99.94 - 99.94  
87 100.22 - 100.21 - 100.20 ~~CHANGE CAP~~  
88 100.01 - 100.03 - 100.03  
89 99.80 - 99.81 - 99.82  
90 99.85 - 99.86 - 99.86





101889

+85°C

CONVENTION

2-20-91

OUT OF CAN

61-108.72-107.35-107.06-107.10

62-107.69-107.69-108.03-107.82

63-119.58-117.89-117.67-118.01

64-110.80-107.83-106.76-106.48

65-109.57-108.04-107.54-107.54

66-110.51-107.89-107.65-106.84

67-116.35-115.81-116.28-116.30

68-107.22-107.03-106.84-106.86

69-112.68-112.86-113.31-113.71

70-106.44-106.21-106.07-106.04

71-111.68-109.41-107.99-107.68

72-112.95-113.41-113.56-113.73

73-112.67-108.69-107.44-107.10

74-108.41-107.09-106.54-106.45

75-108.70-107.12-106.86-106.83

76-110.93-108.07-107.09-106.71

77-109.84-107.66-106.63-106.66

78-108.31-108.02-107.98-107.93

79-112.41-112.51-112.68-113.18

80-112.29-109.12-108.11-107.93

81-111.10-107.89-107.04-106.71

82-113.34-109.51-108.14-107.65

83-107.43-107.10-107.05-107.16

84-107.46-107.34-107.09-107.06

85-113.09-109.52-107.78-107.17

86-111.61-107.68-106.97-107.20

87-110.75-108.20-107.16-106.84

88-113.35-109.68-108.02-107.98

89-107.36-107.21-107.12-107.02

90-109.22-107.26-106.70-106.64



101880

2-12-41

INCH

## ROOM (AFTER +85°C)

21 100.16 - 100.15 - 100.15  
 22 100.03 - 100.03 - 100.07  
 23 99.90 - 99.91 - 99.91  
 24 99.91 - 99.90 - 99.90  
 25 99.79 - 99.80 - 99.78  
 26 100.02 - 100.02 - 100.04  
 27 - 99.85 - 99.84 - 99.84  
 28 100.15 - 100.15 - 100.15  
 29 100.06 - 100.03 - 99.97  
 30 99.92 - 99.92 - 99.92  
 31 100.14 - 100.10 - 100.13  
 32 100.01 - 100.00 - 100.00  
 33 100.22 - 100.09 - 100.09  
 34 100.06 - 100.15 - 100.03  
 35 100.17 - 100.08 - 100.09  
 36 100.13 - 99.90 - 99.89 - 99.92  
 37 - 99.86 - 99.86 - 99.84  
 38 99.95 - 99.95 - 99.95  
 39 - 100.07 - 100.05 - 100.06  
 40 - 100.11 - 100.06 - 100.07







2-21-91

+85°C

THESE UNITS HAD THE ORIGINAL CAP. C1 (P.O.-15548-(MEXCO))  
REPLACED BY A NEWER P.O. 15352. AND REFINED (FUNCTIONAL)

10-10-90

22 - 104.12 - 103.98 - 104.09 - 103.99  
31 - 104.18 - 103.91 - 103.77 - 103.70  
32 - 103.71 - 103.58 - 103.56 - 103.56  
33 - 104.99 - 104.52 - 104.21 - 104.08  
34 - 104.77 - 104.22 - 103.97 - 103.88  
41 - 104.27 - 103.83 - 103.84 - 103.69  
50 - 104.17 - 104.00 - 103.93 - 103.71  
63 - 104.25 - 104.06 - 103.83 - 103.76  
67 - 104.72 - 104.64 - 104.52 - 104.51  
69 - 103.75 - 103.66 - 103.65 - 103.62  
70 - 103.40 - 103.45 - 103.39 - 103.36  
72 - 103.67 - 103.57 - 103.56 - 103.56  
79 - 104.00 - 104.22 - 103.96 - 103.99

ROOM - AFTER 85°C TEST

21 - 100.01 - 99.95 - 99.94  
31 - 100.00 - 99.99 - 99.99  
32 - 100.04 - 100.03 - 100.03  
33 - 100.08 - 100.07 - 100.08  
34 - 100.15 - 100.15 - 100.15  
41 - 100.09 - 100.10 - 100.08  
50 - 100.06 - 100.05 - 100.05  
63 - 99.96 - 99.96 - 99.95  
67 - 99.91 - 99.91 - 99.90  
69 - 99.89 - 99.89 - 99.92  
70 - 99.97 - 100.01 - 99.96  
72 - 99.91 - 99.91 - 99.90  
79 - 99.97 - 99.97 - 99.96



04880

2-19-51

+85°C. FUNCTIONAL (OUT OF CASE)

+28°C

1<sup>st</sup>2<sup>nd</sup>3<sup>rd</sup>4<sup>th</sup>

✓ 41	- 118.38 -	148.23	- 118.77	118.53
42	- 106.86 -	106.72	- 106.76	- 106.68
43	- 105.75 -	105.26	- 105.57	- 105.62
44	- 107.66 -	107.45	- 107.30	- 107.56
45	- 106.67 -	106.28	- 106.29	- 106.31
46	- 111.79 -	108.89	- 107.96	- 107.28
47	- 110.69 -	107.71	- 106.83	- 106.34
48	- 111.22 -	108.01	- 107.40	- 107.66
49	- 113.38 -	109.00	- 107.77	- 107.07
50	- 112.12 -	110.47	- 110.41	- 110.22 ✓
51	- 111.45 -	109.07	- 108.54	- 107.91
52	- 112.19 -	109.30	- 109.25	- 108.77
53	- 110.90 -	108.90	- 108.17	- 108.85
54	- 107.70 -	107.75	- 107.74	- 107.27
55	- 112.30 -	109.06	- 107.90	- 108.18
56	- 109.04 -	107.47	- 107.21	- 107.42
57	- 107.35 -	107.19	- 106.89	- 106.82
58	- 109.26 -	108.14	- 108.04	- 108.54
59	- 108.84 -	108.06	- 108.04	- 108.45
60	- 112.72 -	109.51	- 108.77	- 108.25





101884

2-12-91

+85 AT FUNCTIONAL

TABLE THREE THREE OUT OF 11

1st

2nd

3rd

21	—	109.86	—	107.80	107.18	—	107.06
22	—	113.78	—	113.54	113.54	—	113.78
23	—	111.45	—	108.20	107.10	—	106.65
24	—	107.84	—	107.42	107.48	—	107.43
25	—	113.42	—	109.54	108.25	—	107.68
26	—	107.41	—	106.66	106.52	—	106.54
27	—	106.03	—	105.59	105.63	—	105.60
28	—	109.00	—	107.11	106.65	—	106.66
29	—	112.21	—	108.15	106.99	—	107.02
30	—	114.98	—	109.50	107.96	—	107.34
31	—	114.77	—	114.50	114.72	—	114.78
32	—	114.93	—	114.68	114.85	—	115.13
33	—	114.10	—	113.91	113.92	—	114.16
34	—	113.64	—	109.75	108.42	—	108.09
35	—	112.06	—	108.56	107.86	—	107.96
36	—	112.87	—	108.50	107.12	—	106.67
37	—	108.19	—	106.19	105.69	—	105.61
38	—	110.30	—	108.55	108.40	—	108.30
39	—	109.16	—	107.20	107.07	—	107.00
40	—	112.52	—	108.65	107.44	—	107.16





AT ROOM 2-19-91  
AFTER 85°C RUN  
OUT OF CAN

41	-	100.11	-	100.10	-	100.09
42	-	99.76	-	99.77	-	99.78
43	-	100.18	-	100.16	-	100.16
44	-	100.07	-	100.05	-	100.05
45	-	99.84	-	99.85	-	99.85
46	-	99.80	-	99.81	-	99.80
47	-	99.96	-	99.92	-	99.93
48	-	99.83	-	99.85	-	99.85
49	-	99.81	-	99.82	-	99.82
50	-	100.11	-	100.00	-	100.00
51	-	99.91	-	99.92	-	99.92
52	-	99.88	-	99.89	-	99.89
53	-	99.85	-	99.84	-	99.85
54	-	100.24	-	100.27	-	100.24
55	-	99.93	-	99.93	-	99.93
56	-	100.10	-	100.11	-	100.11
57	-	100.16	-	100.17	-	100.17
58	-	100.25	-	100.26	-	100.26
59	-	100.09	-	100.09	-	100.10
60	-	99.99	-	99.99	-	99.99



$$\Delta R/R = +3\%$$

$$= +3\text{MS}$$



$$I = \frac{E}{R} = \frac{3 \times 10^{-3}}{5 \times 10^6}$$

$$I = 6 \times 10^{-9}$$

$$= 6 \mu\text{A}$$

$$10\text{MS}$$

$$R = \frac{E}{I} = \frac{10}{6 \times 10^{-9}}$$

$$= 1.3 \times 10^9$$

1000 per cent





$$INITIAL = \frac{8}{.5} \times 10^{-4}$$

~~16~~  $\mu$  sec charging

$$.006 \mu \text{ sec} = .16 \mu \text{ sec}$$

$$.014 \mu \text{ sec}$$

$$5 \times 10^{-3}$$

$$I = \frac{E}{R} = \frac{5 \times 10^{-3}}{.5 \times 10^6}$$

$$.010 \times 10^{-9}$$

$$.01 \mu \text{ sec}$$

$$100 TC = \sqrt{10 \text{ sec}}$$

$$\approx 3 \text{ sec}$$



Room

100.08

100.16

+85

WITH  
ESR13

A 113.23 - 109.31

B 109.03 - 107.36

WITH  
POLYCARBONATE  
•33

A 100.91 - 100.01 - 100.01  
B 97.03 - 97.03 - 97.03

A 104.38 - 100.12 - 100.12  
B 100.03 - 98.03 - 98.03



# Room

+85°C

CAD LEAK (IOSEE)

CAD LEAK (IOSEE)

1	3490V -	1.20mV	3600V -	3.81mV +2.61
2	3240V -	1.50mV	3320V -	2.72mV +1.1
3	3160V -	0.77mV	3220V -	2.98mV +2.01
4	3110V -	0.82mV	3160V -	3.76mV +2.96
5	3280V -	1.59mV	3350V -	5.31mV +3.72
6	3080V -	1.29mV	3200V -	3.66mV +2.37
7	3550V -	0.04mV	3530V -	0.21mV
8	30150V -	0.60mV	3000V -	2.83mV +2.23





Room

15206

105E

1 - .349 VF - 1.20 MV  
2 - .324 " - 1.50 "

15352

3 - .315 " - 0.77  
4 - .311 " - 0.72

15546

5 - .328 VF - 1.59 mV  
6 - .308 " - 1.29

IMB

7 - .301 VF - 0.04  
8 - .355 " - 0.60 ✓



RM 1000 10/10/10  
 1000 10/10/10

Row

Column

10013

11.22

8.35

-11

10110

10110

10110

10013

11.22

10013

11.22

-11

10110

10110





RS (124)

with Drobe

Ref. 98.85

Building Time

After Time out

100ms = 95.00

95.44

= 100ms

-3.95

-3.95

300ms = 97.68

97.77

= 300ms

-1.17

-1.05



448

101.3

4

Polars Riming

Active Transcels

100thS = 96.57ms

97.08ms

300ms = 99.97ms

100.05ms

101.6

95.46

96.17

99.57

99.76

3870

3870

3870



R5 (104)

99.06 REB

4-15-78 REB

92.96 - 100ms

-6.10

96.96 - 300ms

-2.10

DRINK  
TURNS

94.06 - 100ms

-5.00

97.21 - 300ms

-1.85

NO DICK





MAY-21-90

TO BE USED FOR 101874 SPECS.

101878- 100MS TIME DELAY RECLAY

TEMP/VOLTA OF TEST

-35°C

+24V - +32V

1 - 98.2MS - 98.1MS  
2 - 99.2MS - 98.7MS  
3 - 98.5MS - 97.7MS  
4 - 98.7MS - 97.3m

+85°C

+24V - +32V

105.7MS - 105.0MS  
107.0MS - 106.2MS  
105.9MS - 105.7MS  
106.8MS - 105.2MS

+25°C

+24 - +32

1 - 100.3MS - 100.5MS  
2 - 101.2MS - 100.9MS  
3 - 101.0MS - 100.5MS  
4 - 100.2MS - 99.4MS.

10% O.H.  
PER F.F.

RECYCLE TEST

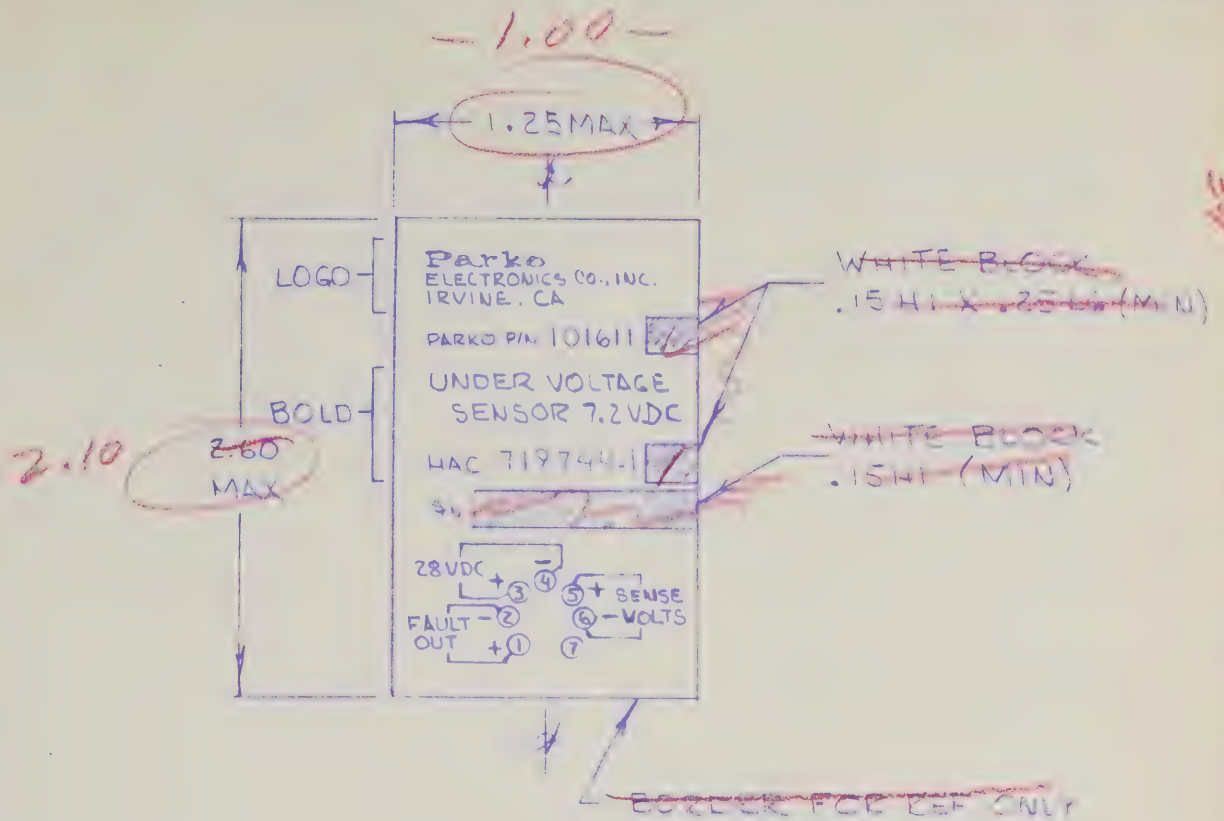
1 UNIT = AT 24V

BASE TIME = 100.5MS

100MS RECYCLE = 96.2MS

300MS " = 99.4MS.





4. TOP DRAWING: ~~101611~~ 101874

3. KISS-CUT IN VERTICAL STRIPS

2. MARKING: ~~WHITE~~ **BLACK** PRINTING ON DULL ~~BLACK~~ **SLATE**  
PER MIL-M-13231A, AMEND 2, GRP I

1. MATERIAL: SCOTCHCAL H 3650 PER MIL-F-8799A  
MIL-D-8634B, MIL-D-8635A, & MIL-P-8906

NOTES:

DIMENSIONS ARE  
IN INCHES AND  
AFTER PLATING

TOLERANCES  
(unless otherwise  
specified)

.X ± .1  
.XX ± .03  
.XXX ± .010  
ANGLES ± 0.5

MACH  
SURF



DR ~~101611~~ 5-9-74

CHK ~~101611~~ 1-6-74

DSGN

PROJ

REL ~~101611~~ 2-2-78

APPROVED

APPROVED

DO NOT SCALE DRAWING

**Parko**

ELECTRONICS COMPANY INC., SANTA ANA, CALIF.

**LABEL -**  
~~TIME DELAY MODULE~~  
~~UNDER VOLTAGE SENSOR~~

CODE IDENT NO.

13979

SIZE

A

906339

REV

SCALE 1:1 APPROX SHEET 1 OF 1

4.3 4.5 .05 (15) 5.1/66 105  
5.95 6.45





0570-3

FAX FAX FAX FAX FAX FAX FAX

GENERAL DYNAMICS  
VALLEY SYSTEMS DIVISION

C-21

30 OCTOBER 1990

FROM:

FAX NUMBER: 714-945-4610  
MAIL ZONE: 602-5  
BUYER: J. K. GARDNER  
EXTENSION: 4672

TO:

FAX NUMBER: 714-660-8016

COMPANY: PARKO  
ATTENTION: FRANK PARKER  
LOCATION: IRVINE CA 92714

I CERTIFY THAT THIS MESSAGE CONTAINS NO CLASSIFIED INFORMATION

REFERENCE: PART NUMBER 5493935, TIME DELAY

DEAR MR. PARKER:

I HAVE BEEN INFORMED THAT A QUALIFICATION TEST PROCEDURE (QTP) AND QUALIFICATION TEST REPORT (QTR) WILL BE REQUIRED FOR THIS PART NUMBER. ATTACHED YOU WILL FIND OUR DOCUMENT QDU 0001 WHICH OUTLINES THE PROCEDURES REQUIRED FOR A QTP AND QTR. PLEASE DO USE THIS DOCUMENT AND PROVIDE ANY ADDITIONAL COST IMPACT ON REQ7.

IF YOU HAVE ANY QUESTIONS OR PROBLEMS REGARDING THIS DOCUMENT, PLEASE DO NOT HESITATE TO CONTACT ME AT 714-945-4610.

4672

THANK YOU.

REGARDS,

JILL K. GARDNER  
ASST. BUYER  
MATERIAL ACQUISITION DEPT.





GENERAL DYNAMICS  
Valley Systems Division

TRANSMITTAL AND SIGNATURE SHEET

717 Supplier Inspection Procedures  
Requirements for Preparation of

GDV 0003

RESEARCH PROGRAM(S): General

PAGES TOTAL: 17

DATE: 9 SEPTEMBER 1986

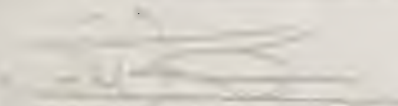
① RELEASED: 4 SEPTEMBER 1986

RELEASING ON:

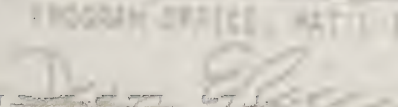
GENERAL DYNAMICS  
VALLEY SYSTEMS DIVISION SIGNATURES

DESIGNED BY: 

CHECKED BY: 

APPROVED BY: 

PROGRAM OFFICE, MATTHEW MIT

DESIGNED BY: 

PROGRAM QUALITY ASS. MGR


APPROVED BY: 

  
CONFIGURATION MANAGEMENT



GOV 0003

ISSUE AND APPROVAL RECORD

REV	DESCRIPTION	DATE
ORIGINAL	<p>This document establishes the requirements for the preparation of Supplier Inspection Procedures (SIP) for use by the supplier for inspection of items to be furnished to and accepted by General Dynamics.</p> <p>APPROVED  PROGRAM PRODUCT ASSURANCE GENERAL DYNAMICS Valley Systems Division</p>	<p>RELEASED 7 SEPTEMBER 1960</p>



GDV 0003

SUPPLIER INSPECTION PROCEDURES,  
REQUIREMENTS FOR PREPARATION OF

GENERAL DYNAMICS

Relay Systems Division





FOREWORD

General Dynamics/Valley Systems Division is required by our customers to review and approve supplier test procedures and test data.

This document describes the structure and required content of test procedures prepared by suppliers.

NOTE

Procedures delivered must be legible and reproducible. Procedures received that do not meet these criteria shall be returned to the supplier for correction.

NOTE

After test procedure approval is granted, no changes shall be made without prior approval of General Dynamics Valley Systems Division.



CODE IDENT

SUPPLIER INSPECTION PROCEDURES  
REQUIREMENTS FOR PREPARATION OF

1. SCOPE

1.1 This document establishes the requirements for the preparation of Supplier Inspection Procedures (SIP) for use by the supplier for the inspection of items to be furnished to the Accepting General Dynamics Valley Systems Division.

1.2 Purpose. The purpose of this document is to establish guidelines for preparing inspection procedures, to ensure the inclusion of essential requirements, such as the following:

- (a) The test equipment used.
- (b) The calibration accuracy and calibration schedules applicable to each item of inspection equipment called out in the (SIP).
- (c) The specific procedure to be followed by the inspector.
- (d) The system for reading, recording, converting and reporting inspection data.
- (e) The program listing, if automatic test equipment is used.
- (f) The data sheets necessary to record the acceptance/rejection history.



## 2. TERMINOLOGY AND DEFINITIONS

### 2.1 Terminology.

2.1.1 Supplier Inspection Procedures - Supplier Inspection Procedure (SIP) is a document which is prepared by a supplier of a given product to indicate the supply-side procedures that the supplier will use to demonstrate that the product is in accordance with the procurement data (i.e., drawings, specifications, quality assurance provisions, etc.).

The generic term "Supplier Inspection Procedures" (SIP) covers various types of inspection procedures used for qualification and/or acceptance of supplier products. These tests are used as described below:

For items classified as key items, procedure requirements are specified in any one of four ways:

- (a) Pilot Lot Inspection (PLI). Performed on the first items produced under production conditions. The PLI sample is normally selected from the first group passing the Quality Performance Inspection (QCI). Approval of this test report with the test data usually constitutes qualification.
- (b) Quality Performance Inspection (QCI). This procedure provides the test methods for each lot of items or each item presented for acceptance. These types are also titled "Lot Acceptance Test" (LAT) or Acceptance Test Procedures (ATP). The inspection lot is defined in MIL-STD-109. QCI data is to be provided with each lot or unit as specified. The data can be variables or attributes data as defined in MIL-STD-109.

#### NOTE

Variables data is required unless otherwise specified by the purchase order.

- (c) Periodic Conformance Inspection (PCI). This procedure and test is essentially a mini-qualification performed at given time intervals. Sampling is made from the items passing QCI.
- (d) Reliability Assurance Inspection Procedure. This procedure is performed as part of the QCI but could be a separate procedure when specified. In other specifications and drawings classified as components, procedures are called QTP's.





GDV 0003

2.1.2 Qualification test procedure (QTP). The Qualification Test Procedure is prepared by the supplier and shall be sufficiently complete and clear so that General Dynamics Valley Systems Division can properly evaluate it with a minimum of reference to other documents. It is the supplier's step-by-step description of the purpose of the test, methodology, selected results, sample test sheets and any other information pertinent to conducting a complete qualification test adequate to demonstrate that the:

- (a) Inherent design of the product meets the specified technical requirements.
- (b) Supplier understands the applicable Quality Assurance provisions as well as the technical requirements.
- (c) Supplier has access to adequate technical skills, procedures and equipment to manufacture the product.

2.1.3 Qualification test report (QTR). The Qualification Test Report, prepared by the supplier, shall consist of the Qualification Test Procedure, the Test Summary Sheet, the Variable Test Data, and if applicable the Failure Record.

## 2.2 Definitions.

2.2.1 Observed test data. Actual measurements observed and recorded during the performance of qualification and quality conformance tests on each specimen comprising the test sample specified in the procurement document. The test data sheet will become the final report by inserting the actual test values.

2.2.2 Attribute data. The attribute data is a summary of the inspection sample test showing the quantity of passed or failed specimens for a given subgroup.

2.2.3 Inspection. When the term inspection is used verbally, it is defined as specified in MIL-STD-109.

2.2.4 Supplier. A supplier is anyone furnishing materials, parts, components, assemblies, subassemblies, systems, subsystems, services, etc., to a prime contractor.

2.2.5 Prime contractor. A prime contractor is a supplier who is charged with the delivery of a specific item or items under contract directly with the Government.



2.2.6 Technical data package (TDP). Requirements supplied by General Dynamics to produce and procure the desired hardware. This includes, but is not necessarily limited to, purchase orders, drawings and specifications.

2.2.7 Acceptance quality level (AQL). The AQL is the maximum percent defective (or the maximum number of defects per one hundred units that, for purposes of sampling inspection, can be considered satisfactory as a process average (see MIL-STD-105).

2.2.8 Key item. A Key Item is defined as an item which due to state of the art, long lead time, limited source availability, high dollar value, proprietary design, unusual availability or operational complexity, or being a unique device requires special evaluation.

2.2.9 Component. A component may be defined as the lowest unit obtainable for a nonrepairable item. This includes, but is not limited to, electronic piece parts, i.e., transistors, capacitors.



### 3. APPLICABLE DOCUMENTS

3.1 The following documents may be used as guidelines as needed document preparation:

#### REFERENCES

##### Standards

MIL-STD-883C

Data, Engineering and Technical:  
Reproduction Requirements for

##### Standards

MIL-STD-1916

Sampling Procedures and Tables for  
Inspection by Attributes

MIL-STD-1916

Quality Assurance Terms and  
Definitions

MIL-STD-883C

Test Reports, Preparation of

#### 3.2 Other publications

Cataloging Handbook  
H4-1

Federal Supply Code for  
Manufacturers (FSCM)

DDO-5220 22M

Industrial Security Manual for  
Safeguarding Classified Information





#### 4. PHYSICAL PREPARATION

4.1 Legibility. Procedures delivered must be legible and reproducible. Procedures received that do not meet these criteria shall be returned to the supplier for correction. Reproduction requirements are covered in MIL-D-5480. Procedures shall be typed on 8 1/2 x 11 inch reproducible white paper. Margins shall be maintained at top, bottom, and sides. Foldout pages should be avoided when possible; if used, however, folding pages shall not exceed 11 x 17 inches. Typing shall be performed on one side of the sheet only and shall be single spaced within any given paragraph.

4.2 Paragraphs. Paragraphs shall be designated using a numeric or alpha-numeric system consistent throughout the document.

4.3 Appendices. Appendices, if needed, may be used to provide supplementary information to support the text.

4.4 Figures. Figures and tables may be used to illustrate the tests. At the option of the supplier, they may be placed within the text, or at the end.



## 5. REQUIREMENTS

5.1 **Responsibility.** Unless otherwise specified in the contract or purchase order, the supplier is responsible for preparation and maintenance of all test procedures. Any changes to a test procedure must be approved by General Dynamics. No oral statement by any person or service that is authorized may alter or amend the test procedure or otherwise affect the requirements of any part of this document, or any specification, standard, specification, drawing or document, without written approval.

5.2 **Content.** The procedures shall be divided into sections and subsections and subdivided into paragraphs, subparagraphs, etc., in such a way that conforms to the inspection specified by the applicable procurement documents. Procedure pages shall be numbered sequentially. Paragraph numbering shall employ the decimal system.

5.3 **Organization.** The procedures shall contain the following elements and be organized as indicated. The sections and subsections may be expanded as necessary at the supplier's option.

5.3.1 **Supplier cover sheet.** The Supplier Cover Sheet shall contain the following information:

- (a) Title of document
- (b) Supplier's Code Identification Number (FCIN)
- (c) Supplier's name, address and telephone number
- (d) Part description
- (e) General Dynamics drawing number
- (f) Specification number (General Dynamics)
- (g) Specification number (Supplier)
- (h) Date

### NOTE

An example of a Supplier Cover Sheet is shown in figure 1.



5.3.2 Issue and approval record. The Issue and Approval record contains a record of changes made to the procedure. Each procedure and revision is listed along with a summary statement of the changes made. Any revision made by the supplier shall be subject to General Dynamics approval.

NOTE

An example of this document is shown in figure 2.

5.3.3 List of effective pages. The list of effective pages shall specify the page number of pages in the procedure. When the procedure is classified for security reasons, the classified pages shall be identified with the applicable security classification in accordance with GDS-2222,224.

5.3.4 Table of contents. The procedure shall include a table of contents which lists the paragraph number, by title and page number. Figures and tables if used, shall be listed separately.

5.3.5 List of applicable documents. The list of Applicable Documents shall include all documents referenced in the procedure.

5.3.6 Administrative data sheet. An Administrative Data Sheet shall be included containing the information exemplified in figure 3.

5.3.7 Text. The text shall be divided as specified below.

- (a) Introduction
- (b) Test Equipment
- (c) Initial Conditions
- (d) Procedure (step-by-step)
- (e) Interpretation of Results
- (f) Test Data Record Sheet





Introduction. The introduction shall explain the purpose of the procedure. It should also be stated here upon which specification, MIL-Q-9858 or MIL-I-45208, the supplier bases his quality system. The calibration system shall be in accordance with

Test Equipment. This is a section describing all inspection and test equipment involved in the testing of the product. If necessary, provide a diagram of the test set up to show how the test equipment is used. This description shall include:

(1) Name or model of equipment

(2) Serial number

(3) Date of calibration

(4) Calibration accuracy and frequency of each item of inspection and test equipment.

NOTE

If calibration equipment is tabulated in the metric system, a decimal equivalent shall be given after each metric entry.

(5) The system for reading, recording, converting and reporting inspection data.

NOTE

When automatic test equipment is used that supplies a test printout, an interpretation key, program, and program flow chart shall be provided.

6.3 Initial conditions. These are conditions that may exist at the beginning of a test, for example, humidity, temperature and air pressure. Also included, if not mentioned previously, will be any preconditioning requirements of the test equipment.

6.4 Procedure. The procedure shall contain the step-by-step instructions for the tests and inspections and the sequence in what sequence. These tests and inspections are those that the supplier will use to demonstrate that the product is in conformance with the drawings and specifications.



6.4.1 Sequence. The procedure shall indicate in which sequence the tests and inspections are to be performed. The sequence may be predetermined by the General Dynamics Technical Data Package (TDP). If not, sequence will be established in accordance with good engineering practices, subject to General Dynamics approval.

6.4.2 Inspection Sampling Plan. The test documents shall indicate the sampling plan used. The procedure shall also indicate sample size and method for lot determination. When the number of lots inspected is described, it shall be so indicated in the sampling plan. Provisions for witness pieces, if applicable, shall be included in the sampling plan. If a sampling plan other than MIL-STD-1916 is used prior approval must be obtained from General Dynamics.

6.4.3 Test Methods. The Technical Data Package provided by General Dynamics will include testing requirements and acceptance criteria. The procedure shall indicate by what test methods these requirements are verified. Accordingly, the description of the test methods shall include the following when applicable:

- (a) Personnel Certification: Shall indicate the certification of operator personnel is required.
- (b) Step-by-step Procedure: The instructions for testing shall include applicable equipment and the general guidelines for carrying out each required test. Note: Specific equipment operating instructions shall not be included, but may be referenced. Acceptance standards, if used, shall be indicated by serial number.
- (c) Surveillance-Process Control: Shall indicate any systems required for surveillance. Methods for Process Control shall also be indicated when required during testing.
- (c) Acceptance Criteria: Acceptance Criteria for each test shall be indicated.
- (e) Documentation: The procedure shall indicate when and where the Test Data sheets are to be filled out and by which inspector or test operator.

















TITLE OF DOCUMENT

FSM NUMBER

COMPANY NAME AND ADDRESS  
TELEPHONE NUMBER

REMARKS

GENERAL DYNAMICS DRAWING NUMBER

GENERAL DYNAMICS SPECIFICATION(S)

SUPPLIER SPECIFICATION(S)

REPAIRED BY

DATE

REVIEWED BY

DATE

APPROVED BY

DATE

REMOVED FROM FILE













SANTA FE VICTIMWARE  
ANALYSIS

GOLDEN CROWN FOR  
SURFACE MOUNT.

NINE COPIES

TACK KIT (SANDAL)

TO T124 IT

714-779-1266





+  
10

↑ + out

See 2

of BAT

See 1

15000's

See 2

See 1

30000's

RECOVER  
TIME

TE-1189

See 1

RECOVER  
DURING  
TRAINING

RECOVER AFTER  
TIME OUT



RECEIVED 16



11/10

$$344 = 10001$$
$$5000 = 1000$$



# FOR FRANK FOR PRICING

GENERAL DYNAMICS - 5493935 - (10/884)

NOTE 9 & 13 = QUALIFICATION IF CALLED FOR ON P.O.

NOTE 10 = QUALITY CONFORMANCE INSPECTION  
GROUPS A, B AND C.

NOTE 11 = MARKING (?) "A" REVISION

---

## INSPECTION

10.1 GROUPS A & B ON EACH LOT

GROUP C: INITIAL INSPECTION AND THEN EVERY  
12 MONTHS - (QUALIFICATION ?)

GROUP A - SUB-GROUP 2 100% TESTS

- 1/ INSULATION RESISTANCE
- 2/ DIELECTRIC STRENGTH
- 3/ REVERSE POLARITY
- 4/ TIME DELAY - AT THREE VOLTAGES
- 5/ RECYCLE TIME - THREE TIMES.

GROUP A - SUB-GROUPS 1 AND 3 = AQL = 1.0

UP TO 90 UNITS WE HAVE TO DO 13

- 1/ VISUAL AND MECHANICAL = DIM., WEIGHT AND MARKING.
- 2/ TIME DELAY AT EXTREME TEMP.

GROUP B = AQL = 1.0

UP TO 90 UNITS WE HAVE TO DO 13

- 1/ = THERMAL SHOCK - 5 CYCLES = 1 HR 10 MI PER CYCLE
- 2/ = VIBRATION -
- 3/ = ELECTRICAL MEASUREMENTS





GROUP C = AQL = 1.0 %

UP TO 90 UNITS WE HAVE TO DO 130 UNITS

SUB-GROUP 1

SOLDERABILITY

SUB-GROUP 2

TERMINAL STRENGTH  
HERMETIC SEAL - (2)  
ELECTRICAL MEASUREMENTS

SUB-GROUP 3

SHOCK  
VIBRATION  
ELECTRICAL MEASUREMENTS

SUB-GROUP 4

SALT SPRAY - (2)



NEED

MIL-STD-109

QUALITY ASSURANCE TERMS & DEFINITIONS

MIL-STD-883

PREPARATION OF TEST REPORTS

MIL-D-5480

DATA - ENGINEERING AND TECHNICAL  
REPRODUCTION REQUIREMENTS.

---

PAIRKOR

QUALITY CONTROL SYSTEM BASED ON REQUIREMENTS  
OF MIL-Q-9858, MIL-I-45208, NHB 5300.4  
AND MIL-STD-45662.



G.D- 5493935 - (10/784)

## ELECTRICAL CHARACTERISTICS

1. TIME DELAY = 100MS  $\pm 10\%$
2. VOLTAGE RANGE = 24 - 32VDC.
3. POWER INTERRUPTION = 10  $\mu$ S. MAX.
4. POLARITY PROTECTION = NO DAMAGE
5. RECYCLE TIME:  
93% = 100MS  
98% = 100MS  

---

100% = 300MS.
6. LOAD IMPEDENCE = 300 TO 6000 OHMS.
7. LEAKAGE CURRENT, OFF STATE = 1.0 MA. MAX
8. FORWARD VOLTAGE DROP, ON STATE = 2.0VDC WITH 30MA.
9. INSULATION RESISTANCE: 500 MEGS AT 500VDC.
10. DIELECTRIC STRENGTH: = 500V RMS.
11. WEIGHT: 1.08 MAX
12. TEMP: -35°C TO +85°C. (0° TO 70° CHIP)  
-20 TO +75 IN <sup>DWG.</sup> ~~WATERS~~

## ENVIRONMENTAL

THERMAL SHOCK: -35°C TO +85°C  
30 MIN (25°-5 MIN) 30 MIN (25°-5 MIN)

VIBRATION: 50G'S

FREQ.: 10 - 2000 HZ. (20 MIN)

12 TIMES IN EACH ~~AXIS~~ OF THREE  
TOTAL  
PERPENDICULAR DIRECTIONS. (36 TIMES)

QUESTION: SHALL ~~WE~~ THE POTTING BE RIGID?

SHOCK: 100 G'S FOR 11 MS.

SALT SPRAY: 96 HRS

HERMETIC SEAL: GROSS LEAK - (FLUID AT 125°C)

TERMINAL STRENGTH: 4 LBS.

SOLDERABILITY:





SH 1 of PARTS LIST -

### 3-Now shop practice

5-Parts made okay

REV	SHT	DESCRIPTION	DISP	DATE	APVD

LOT \_\_\_\_\_

S/N \_\_\_\_\_ thru \_\_\_\_\_

NOTES:

DO NOT SCALE DRAWING

ELECTRONICS COMPANY INC., IRVINE, CALIF.

THE UNIVERSITY OF MICHIGAN

REV

13979

A

SCALE ---

SHEET 1 OF










REVISIONS

ASSEMBLY:

SCHEMATIC:

1 TOP DRAWING: ~~See next drawing~~

NOTES:

DIMENSIONS ARE IN INCHES AND AFTER PLATING		DR	 <b>Parko</b> ELECTRONICS COMPANY INC., IRVINE, CALIF.			
		CHK				
TOLERANCES (unless otherwise specified)		ESGN	PARTS LIST AND TRACEABILITY RECORD  TIME DELAY UNIT			
		PROJ				
		REL				
X - .1 XX - .03 XXX - .010 ANGLES - .5		APPROVED	CODE IDENT NO	SIZE	FILE	REV
		APPROVED	13979	A		
MACH SURF	✓	DO NOT SCALE DRAWING	SCALE		SHEET 1 OF	

101884









# SEAL TEST

MIL-STD-202

~~METHOD~~ METHOD 11213

CONDITION = D -

USE FLUOROCARBONS OR PERFLUOR  
HEATED AT  $+125^{\circ}\text{C}$ .

1/ UNIT RATED AT  $+85^{\circ}\text{C}$

2/ FLUOROCARBONS OR PERFLUOR -

NOT USED ANYMORE - DAMAGE  
TO OZONE LAYER.

MIL-STD-202 METHOD 112 - PAR 2.2

WHY NOT USE CONDITION

B

TEST CONDITION A - SENSITIVITY  $10^{-5}$

B -

D -

ATM/

CC/SEC.

---

MARKING PROBLEMS?

NOTE 11.0

CAC

~~WENT~~ WHITELOCK

MONDAY

---

GROUP C

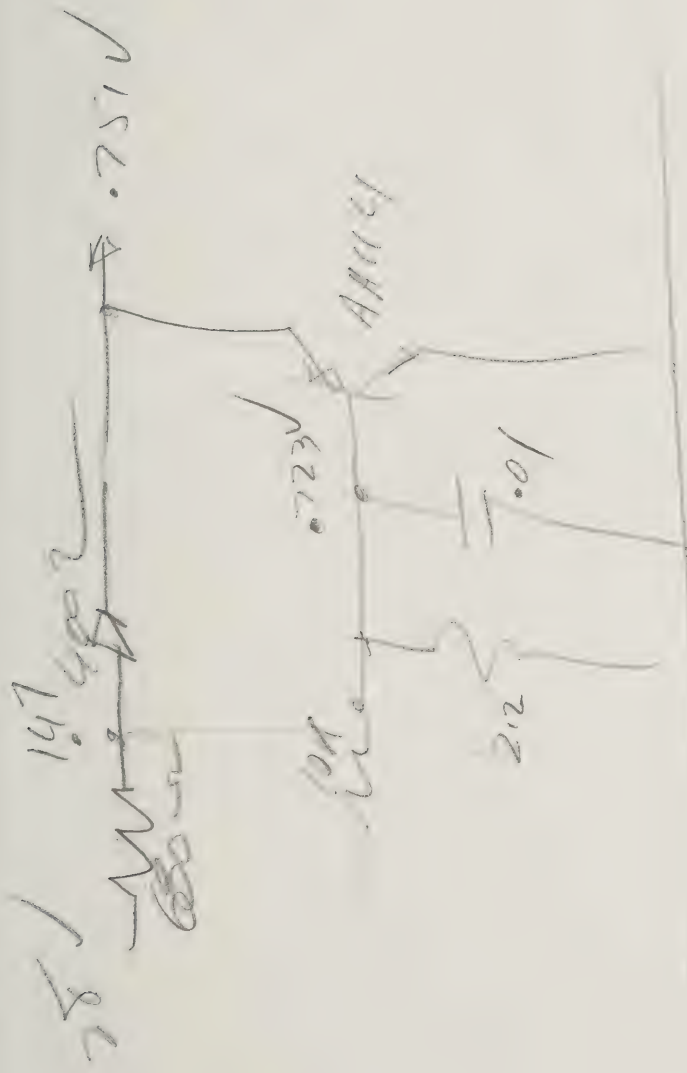
ARE UNITS TO BE  
SHIPPED AFTER

SALT SPRAY(?)

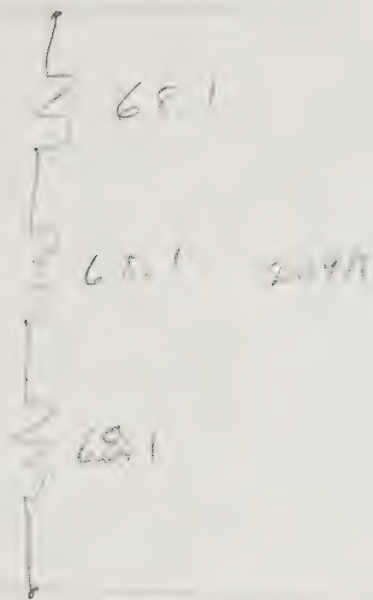
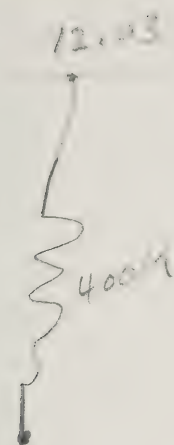
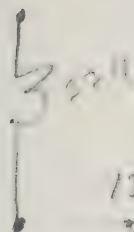
HOW MANY

961425

OVER







20μA

50

60μA

130μA



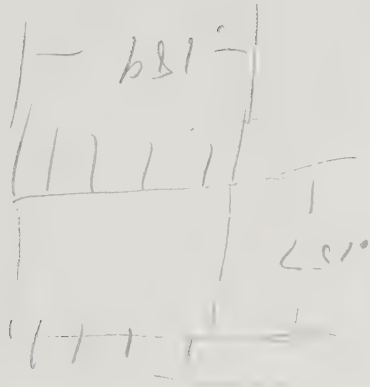


HL 12E17011

30205

120  
 5  
 030

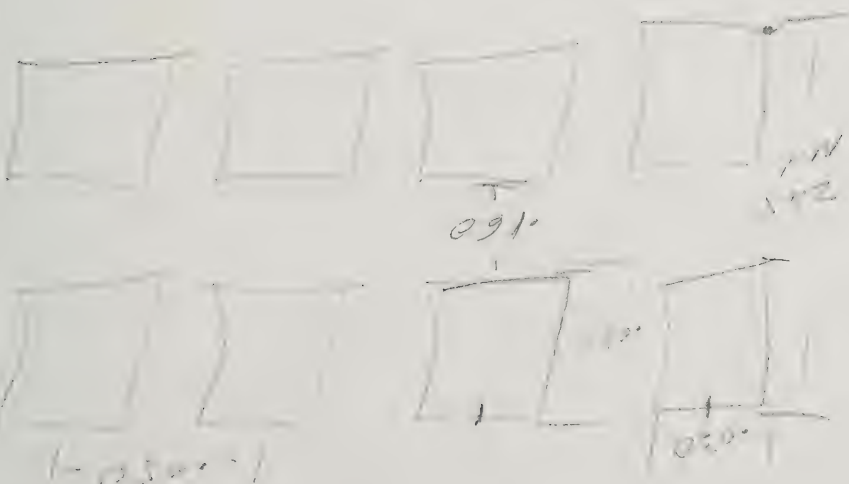
130  
 5  
 20



250 - 11 x 189

250 - 11 x 189

250 - 11 x 189





Date 4-26-90 Parko P/N 101878

Qty.      S/O     

Ref. Des.	P/N	Description	Unit Qty	Total Qty	Insp	Manufacturer	Parko PO	Notes
VT-12	643-ES-1/060	CAN .970X.680	1			M/E - TUBE		
	PM-1878	HEATER	2			EXCEPT INDUST.		
	80205	LA3EL	1			(IN COMPUTED		
		P.C. BOARD	1					
CR1	1N4002	DIODE	1					
CR2	1N963B	DIODE-REVER 12V	1					
Q1	AA114	SCR	1			UNINTODE		
U1	OP204S	OP-AMP	1			FMI		
C1	CS13BF334M	CAP. .033/35V	1					
C2	CM12BX103M	CAP. .01/50V	1					
R1	<del>RS075F333J</del>	RES. 33M	1					
R2	RN5SDX44F	2 TIMING RESISTORS	2					
R3, R4, R5	RN5SD6812F	RES. 68.1M	3					
R6	RCS06F103T	RES. - 10M	1					
R7	RCS06F222T	RES. 2.2M	1					

PM 1878A







3.7, 2.0

.600

3.7, 2.0

3.7, 2.0

3.7, 2.0

3.12  
.062  
.200  
.062

DIMENSIONS ARE  
IN INCHES AND  
AFTER PLATING

TOLERANCES  
(unless otherwise  
specified)

.X  $\pm .1$

.XX  $\pm .03$

.XXX  $\pm .010$

ANGLES  $\pm 0.5^\circ$

MACH  
SURF



DR

CHK

DSGN

PROJ

REL

APPROVED

APPROVED

DO NOT SCALE DRAWING

**Parko**

ELECTRONICS COMPANY INC., SANTA ANA, CALIF.

CODE IDENT NO.

**13979**

SIZE

**A**

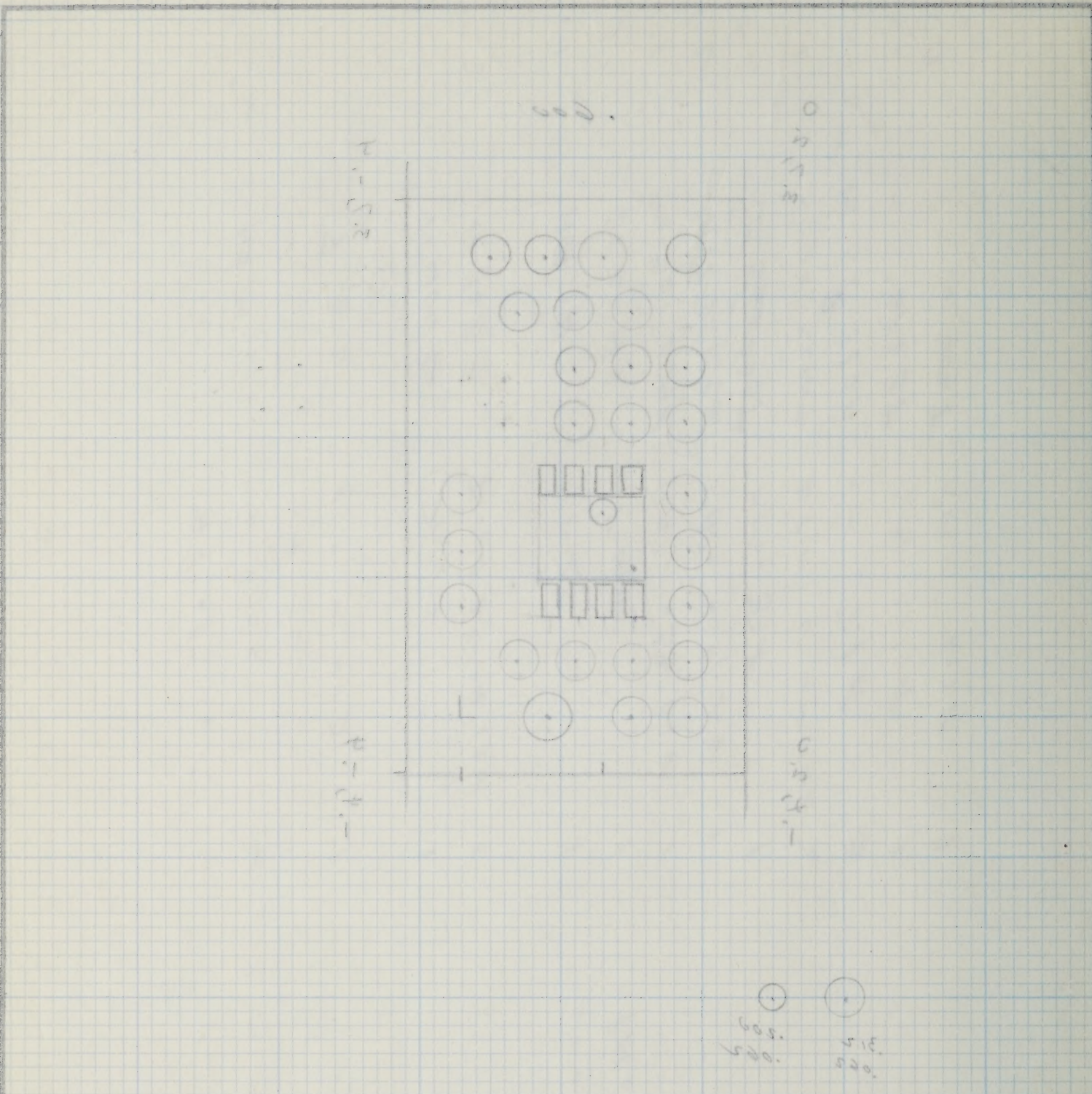
REV

SCALE

SHEET

OF





DIMENSIONS ARE IN INCHES AND AFTER PLATING TOLERANCES (unless otherwise specified) .X ±.1 .XX ±.03 .XXX ±.010 ANGLES ±0.5°		DR CHK DSGN PROJ REL	
DO NOT SCALE DRAWING		APPROVED APPROVED	
SCALE		CODE IDENT NO. <b>13979</b>	
SIZE <b>A</b>		SHEET OF	
REV		ELECTRONICS COMPANY INC., SANTA ANA, CALIF.	